

Claims

1. A circuit for driving cold cathode tubes comprising:
  - an oscillator having a high side MOSFET driver and a low side MOSFET driver;
  - two high voltage MOSFETs;
  - a resistor/capacitor network; and
  - a set of resonance elements comprising a single wound inductive storage device, a resonance capacitor and a cold cathode tube, wherein said resistor/capacitor network directs said oscillator to achieve a first resonance frequency to drive said resonance elements and causes said cold cathode tube to conduct and thereafter said resistor/capacitor network directs said oscillator to achieve a second resonance frequency to drive said resonance elements and illuminate said cold cathode tube.
2. The circuit of claim 1, further comprising a low direct current voltage power source to supply power to said oscillator.
3. The circuit of claim 1, wherein said circuit has a first resistor/capacitor network to direct said oscillator to achieve said first resonance frequency and a second resistor/capacitor network to direct said oscillator to achieve said second resonance frequency.
4. The circuit of claim 1, wherein said first resonance frequency is about 1800 root mean square and said second resonance frequency is about 835 root mean square.
5. The circuit of claim 1, wherein said circuit further comprises a direct current converter circuit to rectify and filter an alternating current input.
6. The circuit of claim 5, wherein said direct current converter circuit is a split voltage device.

7. The circuit of claim 5, wherein said direct current converter circuit is a full wave device and said circuit further comprises a direct current blocking capacitor.

8. The circuit of claim 1, wherein said set of resonance elements further comprises a filter capacitor and said circuit further comprises a current sensor.

9. The circuit of claim 8, wherein said circuit has at least two sets of resonance elements.

10. The circuit of claim 1, further comprising a feedback loop to control current by controlling voltage supply.

11. A circuit for driving cold cathode tubes comprising:

- a split voltage direct current power converter;

- a low direct current voltage power source;

- an oscillator having a high side MOSFET driver and a low side MOSFET driver;

- two high voltage MOSFETs;

- a resistor/capacitor network; and

- a set of resonance elements comprising a single wound inductive storage device, a resonance capacitor and a cold cathode tube, wherein said resistor/capacitor network directs said oscillator to achieve a first resonance frequency to drive said resonance elements and causes said cold cathode tube to conduct and thereafter said resistor/capacitor network directs said oscillator to achieve a second resonance frequency to drive said resonance elements and illuminate said cold cathode tube.

12. The circuit of claim 11, wherein said circuit has a first resistor/capacitor network to direct said oscillator to achieve said first resonance frequency and a second resistor/capacitor network to direct said oscillator to achieve said second resonance frequency.

13. The circuit of claim 11, wherein said first resonance frequency is about 1800 root mean square and said second resonance frequency is about 835 root mean square.

14. A circuit for driving cold cathode tubes comprising:

- a full wave direct current power converter;

- a low direct current voltage power source;

- an oscillator having a high side MOSFET driver and a low side MOSFET driver;

- two high voltage MOSFETs;

- a direct current blocking capacitor;

- a resistor/capacitor network;

- a set of resonance elements comprising a single wound inductive storage device, a filter capacitor, a resonance capacitor and a cold cathode tube, and

- a current sensor, wherein said resistor/capacitor network directs said oscillator to achieve a first resonance frequency to drive said resonance elements and causes said cold cathode tube to conduct and thereafter said resistor/capacitor network directs said oscillator to achieve a second resonance frequency to drive said resonance elements and illuminate said cold cathode tube.

15. The circuit of claim 14, wherein said first resonance frequency is about 1800 root mean square and said second resonance frequency is about 835 root mean square.

16. The circuit of claim 14, wherein said circuit comprises a plurality of sets of resonance elements and a plurality of current sensors.